Personal Equipment Capability Gap Brief

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Top Ten Gap Listing

FMID Section	Priority
Unmanned Aircraft Systems	1
Assault Support	2
Target Acquisition	3
Counter fire / Targeting	4
Fire Support Coordination	5
Information Operations	6
Personal Equipment	**7**
Small Arms / Crew-Served	8
Mobility / Counter-Mobility	9
Rockets / Artillery	10
Riverine / Special Operations	11
Public Affairs	12
Offensive Air Support	13
Electronic Warfare	14
Civil Affairs	15
Offensive Anti-Air Warfare	16

Prioritized Task Identifying the Personal Equipment Gap

1. Conduct Maneuver
2. Conduct Offensive Ops
3. Conduct Offensive Forms of Maneuver
4. Conduct Direct Fires
5. Conduct Mobility Ops
6. Conduct SASO
7. Conduct MOOTW
8. Conduct Amphibious Raid
9. Conduct Counter-Terrorist Ops
10. Seize & Hold Beachhead /Lodgment area
11. Attack Targets
12. Conduct Maneuver and Close Forces
13. Conduct AT Enabling/Supporting Ops
14. Maintain Mobility
15. Conduct Direct Action Ops
16. Conduct Fire Support Task
17. Conduct NEO
18. Control Supporting Arms
19. Conduct Peace Ops
20. Conduct Indirect Fires
21. Conduct HA Ops
22. Move Forces
23. Sustain Fire Support
24. Reinforce & Expand Lodgment
25. Provide Task-Org. Forces
26. Provide Sustainment Forces

Personal Equipment

17 JCA's supported: Hi Pri-Joint Access, Access Denial operations

26 MCT's supported : Hi Pri-Conduct Maneuver

Deficiencies in Conditions: Challenges of Urban Terrain (i.e. hide kits, visual deception); Fire Resistance; Ergonomics (weight and comfort); and Survivability (water, heat, altitude, other environmental hazards)

Deficiencies in Standards: Weight / Heat as related to execution times and combat effectiveness; Integration of all personnel equipment; Target Identification and Engagement (Distance, accuracy and effectiveness)

Gap, Excess, or Shortfall

O	With the increase in end strength O&M funding for all personal equipment will require commensurate increases
T	**Fielding of new/improved personal equipment may require training teams (MTV, etc…)**
M	**Identified Capability Sets, continued improvements to existing sets and continued R&D of new technologies. Further decrements in funding will create additional capability gaps. Capability gap for FOTS is lack of I2 and thermal night sight. Capability gap for Optics is inability to ID target at the Max effective range; no thermals at squad level**
F	**Fielding Plans and Priorities need to be closely monitored and tailored to current deployment schedules; CIF and STAP locations and functioning will need to be increased to ensure proper support of current and future requirements**

Inputs utilized for analysis:

- MAGTF FAA dtd Jun 2006
- MCLL Database
- JCIDS supporting documentation for all PORs identified
- Marine Corps Midrange Threat Estimate: 2005-2015
- Grey Book – Mar 06
- Warfighting Program Evaluation Board POM-10 Guidance
- DC, PP&O GCE Advocate's Capability List. – Jun 06
- Initial end strength increase planning figures

1. Follow-On to the SMAW (FOTS)
2. Family of Body Armor (FBA)
3. Fire Resistant Organizational Gear (FROG)
4. Night Vision Mod Line (NVML)
5. Helmet Integration
6. Marine Enhancement Program (MEP)
7. Family of Individual Optics (FIO)
8. Cold Weather Capability Sets
9. Sniper Capability Set
10. Infantry Load Bearing Equipment (ILBE)
11. Full Spectrum Battle Equipment (FSBE)

Impact on the MAGTF

- FMID conducted a detailed FAA that identified the Tasks, Conditions and Standards to support the FNA's identification of the Personal Equipment Gap.
  - The Gap supported 17 JCAs and 26 of the 49 FMID FAA Tasks identified.
  - The Personal Equipment Gap is important to the Marine Corps because it includes a host of capabilities required by the warfighter to ensure mission accomplishment. From Personal Protective Equipment, I2 and Thermal Optics, to Scout Sniper Capability Sets and Anti-Armor Assets to the integration of all of these assets.
  - In order to close with and destroy our enemies the warfighter must be protected from the enemy's lethality, he must be able to locate and identify the enemy at the maximum effective ranges of weapons, he must be able to engage the enemy with effective means and his efforts and the equipment he uses must be integrated IOT ensure interoperability and maximum effectiveness.
  - The Personal Equipment Gap is related directly to the Marine Corps' ability to conduct Distributed Operations. Improvements in the Family of Body Armor to provide the warfighter lighter and more effective protection is on going and requires consistent funding as it will ultimately facilitate swifter movement. Additionally, optics equipment must be able to provide the warfighter the ability to engage the enemy at maximum ranges by providing the warfighter the means to locate and identify that enemy. Completed Cold Weather Capability Sets and Scout Sniper Capability Sets directly relate to force protection, lethality, and general combat effectiveness of the individual Marine and Sniper.

Key Attributes Needed to Resolve the Gap

- Continue to provide adequate R&D and sustainment funding for currently fielded personal equipment. Family of Body Armor (FBA), Helmet Integration (HI) and Fire Resistant Organizational Gear (FROG) continue to evolve to meet emerging requirements.
  - FBA continues to spiral into more effective products. From the OTV to the MTV…the 7 additional attributes have been determined to be worthy off all Marines. The funding to replace the OTVs with the MTV and the ability to continue the research and development for a lighter, ergonomic and overall more capable body armor requires consistent funding.
  - Also a spiral program, HI is on the verge of providing a helmet based on the Light Weight Helmet as the platform that provides a face shield, mandible protection and a rail system. HI continues to conduct R&D on integrating communications and other head mounted equipment and developing lighter materials that maintain the same or better ballistic protection.
  - FROG has taken a leap forward to provide the warfighter a comfortable and increased means of achieving four or more seconds of flame resistance. As the specific uniform items wear from usage, they will require sustainment dollars in order to properly supply the force. The R&D effort to develop materials that provide increased fire resistance and is appropriate for the conditions being endured by the Marine also requires continued funding. Without this effort the gap will widen or others will develop.

Key Attributes Needed to Resolve the Gap

- Provide the capability for the warfighter to identify targets at the maximum effective ranges of a given weapon system. Thermal and I2 devices come short on range and hinder the warfighter when in a position to engage the enemy at maximum ranges.

- Provide I2 and Thermal Night Sight and fire from enclosure capability to the Follow-on to the SMAW (FOTS) in order to enhance the small unit's ability to engage enemy armored targets.

- Provide fused technologies in optics in order to integrate I2, thermal, white light and laser technologies, ultimately increasing the warfighter's lethality and potentially lightening his load.

- Discontinue the constant decrementing of Cold Weather and ILBE funding lines as these reductions will cause gaps in our ability to continue the development of lighter more effective cold weather and load bearing equipment for the warfighter (i.e. Seven Layer System).

- Provide a fully integrated Scout Sniper Capability that is trained, sustained, supported and provided the equipment to engage the enemy at longer ranges with increased lethality, survivability and tolerance to enemy counter-measures and with a decreased risk of detection.

Key Attributes Needed to Resolve the Gap

- Provide lighter more ergonomic loads for the individual Marine IOT allow for increased mobility.

- Provide identified equipment sets and training support personnel and equipment to the required training teams. This includes the increasing of standard equipment AAOs and the introduction of new AOs for threat weapons and the associated items for their training and sustainment.

- Enhance programs (i.e. MEP) that provide off the shelf equipment that supports the warfighter immediately, to include a compass that does not freeze in cold temperatures and is multi-functional with altimeter, barometer, etc…,a flashlight that uses less power and offers increased illumination settings for white, blue, red and infrared light, and an individual water purification system.

- Enhance the executibility of MERS, allowing it to function as the integrator of ALL acquisitions that impact the Marine infantry squad, to include the operation of an integration lab.

New or Current Capability Issues

- New capabilities are associated with the Personal Equipment Gap:
  - Follow-on To the SMAW (FOTS) requires a more lethal weapon that includes an I2 and Thermal Night Sight and fire from enclosure capability.
  - The Scout Sniper Capability Set, Cold Weather Capability Set and ILBE, all realize new capabilities as well as require the sustainment of existing capabilities and their continued improvements.
  - Fused Optics Capability
  - Optics capable of detecting and identifying enemy targets while matching or exceeding the related weapon system's maximum effective range
  - Individual Water Purification
  - Helmet Integration
  - Fire Resistance Organizational Gear
  - Family of Body Armor
  - Threat Weapons, Ammunition and associated SL-3 equipment
- The capabilities associated with the Gap of Personal Equipment are not duplicative but are all being addressed by sister services. They range from being a Fully Joint Effort to being Joint Interest Only.

Integration Concerns

- Critical links to other Integration Divisions include:
  - All
    - ILBE
    - MEP
    - MERS
  - Command and Control
    - Helmet Integration
    - Family of Body Armor
    - Scout Sniper Capability Set
  - Logistics
    - Cold Weather Capability Set (i.e. Tents)
    - Threat Weapons
  - Intelligence
    - Scout Sniper Capability Set
    - Threat Weapons
  - Force Protection
    - Scout Sniper Capability Set (i.e. Counter-Sniper initiatives)
    - Family of Body Armor
    - Helmet Integration
    - FROG

Possible DOTLPFM Impacts

- Doctrine.
  - The Personal Equipment Gap does not relate to specific doctrinal publications. However the capabilities defined in the gap do have a direct impact on doctrine:
    - Cold Weather and Mountain Operations publications are being consolidated and updated as a result of the Cold Weather Capability initiative. The end result will be one MCWP and three MCRPs that will support the mitigation of this gap.
    - The Sniper Publication is currently being revised to support current capabilities and established schoolhouse POIs. As the Scout Sniper Capability assessment continues, emerging shortfalls and gaps will require additional doctrinal changes.
    - Fused optics technology and the ability to detect and identify the enemy at maximum ranges for associated weapons will require changes to doctrine related to tactics, operations and weapons employment. These doctrinal changes will support the mitigation of this gap.
    - FOTS will require rewriting the current anti-armor publication.
    - Establishment of threat weapons doctrinal publications for operations and training, maintenance and sustainment will be required to support the mitigation of this gap.

Possible DOTLPFM Impacts

- Organization
  - Changes to organizations will likely result
    - Cold Weather Capability (1 MEB / 2 MEU requirement)
    - Training Teams and the supporting establishments related to preparing the Training Teams (ETT and MTT)
    - Scout Sniper Capability Set (based on upcoming assessment)

DOTLPFM Impacts

- Training
  - No provision or modification of training could eliminate the Personal Equipment Gap
  - Training requirements identified for the fielding of new equipment include:
    - Operation and Maintenance of new optics, weapons and equipment
    - Doctrinal changes identified in the employment requirements of new optics, weapons and equipment
    - School House POI changes
  - Training will be provided through a host of sources depending on the requirement and will likely be a coordinated effort between Mobile Training Teams, Schoolhouses and Unit Training Officers.

DOTLPFM Impacts

- Leadership and Education
  - Leadership decisions cannot mitigate the Personal Equipment Gap.
  - Organizational leadership may be needed to support changes based on the MEP/MERS integration and future recommendations of the Scout Sniper Capability assessment. Additionally, the Cold Weather Capability Set is designed around equipping 1 MEB and 2 MEUs, and require a decision as to the use of fulltime proponents.
- Personnel
  - No personnel changes can be done to eliminate the Personal Equipment Gap.
  - MOS realignment cannot mitigate the Personal Equipment Gap.
- Facilities
  - Facility changes in support of the Cold Weather Capability is required as equipment is stored in Barstow and identified STAPS are consolidated.
  - Theater facilities are required in the support of in theater distribution and sustainment of the FBA, FROG and other theater specific equipment.
  - Identified funding, other than Congressional Plus-Up, for the MERS Integration Lab.

DOTLPFM Impacts

- Materiel
  - **FOTS:** Currently moving towards Milestone B…the gap remains providing an I2 and Thermal Night Sight device and firing from an enclosure. Army uses SMAW-D… disposable.
    - Technology enhancement (replaces the SMAW)
    - Does away with a spotting rifle
    - Increased reliability and target acquisition
    - Bunker defeat
    - Will spiral to development of firing from enclosure capability
    - **CDD 6 Jul 05 (approved); Revision in process**
  - **FBA:** The MTV should replace the OTV, 1 for 1…this will incur a necessary increase in the funding requirement to support acquisition and sustainment. The Army is currently looking at the MTV as an interim solution and there is USMC involvement in the Army's R&D effort towards future Body Armor.
    - 7 additional attributes of MTV enhances OTV
    - Draft letter directing 1 for 1 replacement being staffed
    - R&D effort with Dragon Skin and Ectoskeleton are future endeavors however, interim enhancements increase the combat effectiveness of the warfighter and close the personal equipment gap.
    - **USON for OTV Enhancement 23 May 06 (MTV)**
    - **FBA ORD, 7 changes, signed 23 Jan 95 to 15 Mar 06**

DOTLPFM Impacts

- Materiel
  - **FROG:** The FROG Capability Sets, defined in Phases, provides the solution to assist in mitigated the personal equipment gap. Sustainment and continued R&D funds will be required to maintain this mitigation assistance. This is a joint effort with the Army that shares information and technologies.
    - Current FROG AAO is 60,000 ISO deployed forces, requirement for sustainment of this AAO has been identified and is required.
    - All Marines should have this capability.
    - **USON 21Jul 06, Addendum 11 Oct 06 est. Capability Sets, Sustainment requirement document 25 Oct 06**
  - **NVML:** This MOD Line was intended to support @120,000 legacy PEIs. Additional funding cuts will diminish the ability of the USMC to maintain and support current PEIs as well as provide outyear support for new PEIs procured in FY05-FY06. The Army continues to update its Night Vision and several of the devices are used by both services.
    - Current funding cannot support multitude of new procurements
    - Essential in continuing Joint participation with other services, industry and USMC unique activities to evaluate safety, lethality and technology improvements for Night Vision Equipment
    - **Multiple CPDs**

DOTLPFM Impacts

- Materiel
  - **Helmet Integration:** The materiel solution is a spiral from the Lightweight Helmet. Continued procurement and R&D dollars are required to continue the mitigation assistance. Currently an on going effort by US Army as well as NATO. USMC currently working an MOU with Canada to share current and future
    - Lightweight Helmet Sustainment
    - Near term improvements include face shield, mandible protection and rail system
    - Spiral development includes communication integration
    - **ORD, LWH Ch 1 signed 20 Aug 01**
  - **MEP:** Program provides immediate, within 2 years, solutions to the needs of the warfighter. Funding has typically been menial and focused on R&D vice the desired PMC funds.
    - Program has realized equipment that has assisted in the mitigation of the defined gap
      - MTV, Eye Protection, LW Helmet, ILBE, Quiet Pro, Gunslinger, IWPS, etc…
    - MERS falls under this funding line
    - **MEP Policy Letter 3 Nov 2004**
    - **MERS ICD in USMC Staffing (MCATS)**

DOTLPFM Impacts

- Materiel
  - **Family of Individual Optics:** The FOIO develops the next generation of crew-served sight, individual weapon sight, and helmet mounted NVG. Cuts in this program will diminish the ability to develop advanced combat optics to include fused technologies and other spiral programs away from the single-function COTS/GOTS acquisitions.
    - Provides fused imagery capability to allow Marines to detect, identify, engage and adjust indirect fire in total darkness and through obscurants.
    - Allows USMC to reduce total ownership cost of optic PEIs by combining multiple technologies into single platforms (thermal, I2, magnified optics and laser range finding, illuminating, and pointer functionalities)
    - **Multiple CPDs**
  - **Cold Weather Capability:** Currently provides a 1 MEB/2 MEU Cold Weather operations capability. Equipment upgrades to lighten the load and provide existing, higher performance technologies to the warfighter and provides assistance in mitigating the identified gap.
    - 7 layer system will lighten the load and be integrated into all operations
    - Improved sleeping system
    - Improve compass
    - Improved mobility (skis/snowshoe)
    - **Decision Paper 7 Jul defining 1 MEB/2MEU policy**
    - **ICD Draft, staffing in near future**

DOTLPFM Impacts

- Materiel
  - **Scout Sniper Capability:** A study using congressional earmark will provide the JCIDS Analysis identifying specified gaps within the USMC sniper capability. Holistic approach will require a funding line that ensures integration and assists in closing the identified personal equipment gap.
    - Gaps FY10 to FY17 and FY17 to beyond TBD
    - Sniper Capability Sets (Optics) would eventually fall under this funding line. In the interim, this line provides a necessary separation in optic funding
    - **ICD Jan 08, ROM cost estimates Aug 07 for POM 10 submission**
  - **ILBE:** Load bearing carrying system that is designed to provide a durable and lightweight means for the deployed Marine. No joint activity
    - Significant improvements realized from MOLLE system
    - Greater integration with the OTV/MTV.
    - **CDD ch 1, ILBE 23 Feb 05**

Recommendations

- **Continue to fund FOTS**

- **Provide adequate development, procurement and sustainment funds for programs related to personal protective equipment (PPE). Programs like FBA, FROG and Helmet Integration directly correspond with the warfighter's ability to accomplish the 26 tasks related to the personal equipment gap.**

- **Increase the NVML and FOIO funding line to ensure continued development of a fast changing technology and to ensure sustainment of the current/future inventory.**

- **Provide the equipment necessary to support the identified training gaps with respect to GWOT TTs. This should include a program to procure and sustain threat weapons and associated ammunition and SL-3 equipment.**

Recommendations

- **Provide the funding to support the holistic approach to the USMC Scout Sniper Capability, ultimately ensuring integration that results in increased lethality and survivability.**

- **Maintain current funding in support of Cold Weather operations as Mountain/Cold Weather Operations are a reality and further cuts in the funding will result in gaps that are not easily filled in the short term.**

- **Redefine the MEP program and its organization that incorporates MERS and the Integration Lab and ensures the most effective equipment is procured with expediency and interoperatibility.**

- **Ensure doctrinal and course curriculums are updated or developed as identified.**

Questions?

Back-Up

FNA Results: FMID

G – Gap, E – Excess, S – Shortfall, N - NA

Highest Pri JCA supported and total number	*FMID Section/* **# MCTL tasks**	Description of Capability Gap by FMID section across applicable tasks	FMID Pri	G/E/ S/N	Gap Mitigation	
					POM-10	Beyond
Joint Deployment, Rapid Distribution/ **15 JCA'a supported**	*Information Operations/* **Supports 18 of 49 FMID FAA tasks**	**Capability gaps in PSYOPS, CNO, CNA, and CNE assets. Capacity gaps in combat camera. Tier II and III UAS gaps apply here.**	6	G	**Y**	**Y**
Joint Access, Access Denial operations/ **17 JCA'a supported**	*Personal Equipment/* **Supports 26 of 49 FMID FAA tasks**	**Capability gap for FOTS is lack of I2 and thermal night sight. Capability gap for Optics is inability to ID target at the Max effective range; no thermals at squad level. Gaps and shortfalls wrt FROG and family of ballistic protection.** *Gaps will evolve with continued decrementing of Cold Weather and Scout Sniper Capability Sets.* **Family of Body Armor, Helmet Integration and Fire Resistant Organizational Gear continue to evolve to meet emerging requirements and necessitate appropriate funding support for both R&D and sustainment of currently fielded equipment.**	7	G	**Y**	**Y**
Provide and Employ Joint Fires/ **4 JCA'a supported**	*Small Arms, Crew Served/* **Supports 9 of 49 FMID FAA tasks**	**Capability gaps: ballistics, digitized fire control, precision weapons, urban operations, anti armor, C2, integration of FS systems/ designation of precision targets, and ability to integrate ammunition and transfer targeting information**	8	G	**Y**	**Y**
Joint Access & Access Denial Ops/ **16 JCA's supported**	*Mobility/ Counter Mobility* ***Supports 30 of 49 FMID FAA tasks***	**Capability and Capacity Gaps in survivable mobility platforms, ship to shore mobility, engineer recon, breaching-detection, and bridging: Capability Shortfalls in tactical LOC bridging. Capacity Shortfalls in establishment of Landing zones, tactical LOC bridging.**	9	G	**Y**	**Y**
Provide & Employ Joint Fires **3 JCA's supported**	*Rockets/ Artillery* ***Supports 6 of 49 FMID FAA tasks***	**MET capability ISO indirect fires and CT; capability expires 2010. RDTE must continue for PERM (EFSS) development and eventual PANMC. HIMARS PMC must continue to reach GMLRS TMR. LW 155 PMC will need to continue & increase due to AAO increases (DMFA, OIF, MPP-N & end-strength incr)**	10	G	**Y**	**Y**